

Please amend the claims as shown in Exhibit A". A clean set of the claims that have been amended are as follows:

1 1. (Twice Amended) In a wireless telecommunications system having a Base
2 Transceiver Station (BTS) and a mobile terminal equipped with an integrated Global Positioning
3 System (GPS) equipped receiver, the Base Transceiver Station having operational control of the
4 GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-
5 equipped mobile terminal, said method comprising the steps of:

6 demodulating signals received from a multiplicity of GPS satellites at a reference GPS
7 receiver, said reference GPS receiver being connected to the wireless telecommunications system
8 and having a determinate physical location relative to the Base Transceiver Station;

9 recovering respective navigational data signals from each of said demodulated GPS
10 signals;

11 originating a request for approximate navigational information from the GPS-
12 equipped mobile terminal to the Base Transceiver Station;

13 transmitting recovered navigational data signals to the GPS-equipped mobile terminal
14 responsive to said request for approximate navigational information; and

15 determining, from said transmitted navigational data signals, the approximate location
16 of the GPS-equipped mobile terminal;

17 wherein the GPS satellite signals comprise one of:

18 Standard Positioning Service (SPS) signals received on an L1 frequency, said
19 L1 frequency being centered at about 1575.42 MHz; or
20 Precise Positioning Service (PPS) signals received on an L2 frequency, said
21 L2 frequency being centered at about 1227.60 MHz.

1 8. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped
4 mobile terminal, a method for determining the approximate position of the GPS-equipped mobile
5 terminal, said method comprising the steps of:
6 demodulating signals received from a multiplicity of GPS satellites at a reference GPS
7 receiver, said reference GPS receiver being connected to the wireless telecommunications system
8 and having a determinate physical location relative to the Base Transceiver Station;
9 recovering respective navigational data signals from each of said demodulated GPS
10 signals;
11 determining whether the GPS signal strength at the GPS-equipped mobile terminal
12 is adequate to permit initialization of the reference GPS receiver associated with the GPS-equipped
13 mobile terminal within a desired response time;
14 if not, originating a request for approximate navigational information from the GPS-
15 equipped mobile terminal to the Base Transceiver Station;

16 transmitting recovered navigational data signals to the GPS-equipped mobile terminal
17 responsive to said request for approximate navigational information; and
18 determining, from said transmitted navigational data signals, the approximate location
19 of the GPS-equipped mobile terminal.

1 9. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped
4 mobile terminal, a method for determining the approximate position of the GPS-equipped mobile
5 terminal, said method comprising the steps of:

6 demodulating signals received from a multiplicity of GPS satellites at a reference GPS
7 receiver, said reference GPS receiver being connected to the wireless telecommunications system
8 and having a determinate physical location relative to the Base Transceiver Station;

9 recovering respective navigational data signals from each of said demodulated GPS
10 signals;

11 originating a request for approximate navigational information from the GPS-
12 equipped mobile terminal to the Base Transceiver Station;

13 transmitting recovered navigational data signals to the GPS-equipped mobile terminal
14 responsive to said request for approximate navigational information; and

determining, from said transmitted navigational data signals, the approximate location of the GPS-equipped mobile terminal;

wherein said step of transmitting is performed via one of:

a Cell Broadcast (CB) Short Message Service (SMS) message of the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.

11. (Amended) In a wireless telecommunications system having a Base Transceiver Station (BTS) and a mobile terminal equipped with an integrated Global Positioning System (GPS) equipped receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

recovering respective navigational data signals from each of said demodulated GPS signals;

originating a request for approximate navigational information from the GPS-equipped mobile terminal to the Base Transceiver Station;

transmitting recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information;

determining, from said transmitted navigational data signals, the approximate location of the GPS-equipped mobile terminal

periodically transmitting a Timing Advance parameter from the Base Transceiver Station to the GPS-equipped mobile terminal to dynamically compensate for varying distances between the GPS-equipped mobile terminal and the Base Transceiver Station; and

refining said approximate location of the GPS-equipped mobile terminal using said Timing Advance parameter.

13. (Twice Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a method for determining the approximate position of the GPS-equipped mobile terminal, said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

computing an estimated location of said reference GPS receiver using said demodulated signals from said GPS satellites;

11 originating a request for approximate locational information from the GPS-equipped
12 mobile terminal to the Base Transceiver Station;

13 transmitting said estimated location of said reference GPS receiver from the Base
14 Transceiver Station to the GPS-equipped mobile terminal responsive to said request for approximate
15 locational information; and

16 determining, from said transmitted location of said reference GPS receiver, the
17 approximate location of the GPS-equipped mobile terminal;

18 wherein the GPS satellite signals comprise one of:

19 Standard Positioning Service (SPS) signals received on an L1 frequency, said
20 L1 frequency being centered at about 1575.42 MHz; or

21 Precise Positioning Service (PPS) signals received on an L2 frequency, said
22 L2 frequency being centered at about 1227.60 MHz.

1 20. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile
4 terminal, a method for determining the approximate position of the GPS-equipped mobile terminal,
5 said method comprising the steps of:

6 demodulating signals received from a multiplicity of GPS satellites at a reference GPS
7 receiver, said reference GPS receiver being connected to the wireless telecommunications system
8 and having a determinate physical location relative to the Base Transceiver Station;

9 computing an estimated location of said reference GPS receiver using said
10 demodulated signals from said GPS satellites;

11 determining whether a GPS signal strength at the GPS-equipped mobile terminal is
12 adequate to permit initialization of the ~~reference~~ GPS receiver associated with the GPS-equipped
13 mobile terminal within a desired response time;

14 if not, originating a request for approximate locational information from the GPS-
15 equipped mobile terminal to the Base Transceiver Station;

16 transmitting said estimated location of said reference GPS receiver from the Base
17 Transceiver Station to the GPS-equipped mobile terminal responsive to said request for approximate
18 locational information; and

19 determining, from said transmitted location of said reference GPS receiver, the
20 approximate location of the GPS-equipped mobile terminal.

1 21. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile

terminal, a method for determining the approximate position of the GPS-equipped mobile terminal,
said method comprising the steps of:

demodulating signals received from a multiplicity of GPS satellites at a reference GPS
receiver, said reference GPS receiver being connected to the wireless telecommunications system
and having a determinate physical location relative to the Base Transceiver Station;

computing an estimated location of said reference GPS receiver using said
demodulated signals from said GPS satellites;

originating a request for approximate locational information from the GPS-equipped
mobile terminal to the Base Transceiver Station;

transmitting said estimated location of said reference GPS receiver from the Base
Transceiver Station to the GPS-equipped mobile terminal responsive to said request for approximate
locational information; and

determining, from said transmitted location of said reference GPS receiver, the
approximate location of the GPS-equipped mobile terminal;

wherein said step of transmitting is performed via one of:

a Cell Broadcast (CB) Short Message Service (SMS) message over the
wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications
system.

1 24. (Twice Amended) In a wireless telecommunications system having a Base
2 Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System
3 (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile
4 terminal, a system for determining the approximate position of the GPS-equipped mobile terminal,
5 said system comprising:

6 demodulation means for demodulating signals received from a multiplicity of GPS
7 satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless
8 telecommunications system and having a determinate physical location relative to the Base
9 Transceiver Station;

10 signal recovery means for recovering navigational data signals from each of said
11 demodulated signals from said GPS satellites;

12 requesting means for requesting approximate navigational information for the GPS-
13 equipped mobile terminal from the Base Transceiver Station;

14 transmission means for transmitting said recovered navigational data signals to the
15 GPS-equipped mobile terminal responsive to said request for approximate navigational information;
16 and

17 determination means for determining, from said transmitted navigational data signals
18 to determine the approximate location of the GPS-equipped mobile terminal;

19 wherein the GPS satellite signals comprise one of:

20 Standard Positioning Service (SPS) signals received on an L1 frequency, said
21 L1 frequency being centered at about 1575.42 MHz; or
22 Precise Positioning Service (PPS) signals received on an L2 frequency, said
23 L2 frequency being centered at about 1227.60 MHz.

1 31. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile
4 terminal, a system for determining the approximate position of the GPS-equipped mobile terminal,
5 said system comprising:

6 demodulation means for demodulating signals received from a multiplicity of GPS
7 satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless
8 telecommunications system and having a determinate physical location relative to the Base
9 Transceiver Station;

10 signal recovery means for recovering navigational data signals from each of said
11 demodulated signals from said GPS satellites;

12 determining means for determining whether a GPS signal strength at the GPS-
13 equipped mobile terminal is adequate to permit initialization of the reference GPS receiver
14 associated with the GPS-equipped mobile terminal within a desired response time;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station, if said GPS signal strength is not adequate to permit said initialization;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal.

32. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

demodulation means for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

signal recovery means for recovering navigational data signals from each of said demodulated signals from said GPS satellites;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information; and

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal,

wherein said transmission means comprises one of:

a Cell Broadcast (CB) Short Message Service (SMS) message over the wireless telecommunications system; or

a Broadcast Control Channel (BCCH) of the wireless telecommunications system.

34. (Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile terminal, a system for determining the approximate position of the GPS-equipped mobile terminal, said system comprising:

demodulation means for demodulating signals received from a multiplicity of GPS satellites at a reference GPS receiver, said reference GPS receiver being connected to the wireless

telecommunications system and having a determinate physical location relative to the Base Transceiver Station;

signal recovery means for recovering navigational data signals from each of said demodulated signals from said GPS satellites;

requesting means for requesting approximate navigational information for the GPS-equipped mobile terminal from the Base Transceiver Station;

transmission means for transmitting said recovered navigational data signals to the GPS-equipped mobile terminal responsive to said request for approximate navigational information;

determination means for determining, from said transmitted navigational data signals to determine the approximate location of the GPS-equipped mobile terminal,

means for periodically transmitting a Timing Advance parameter from the Base Transceiver Station to the GPS-equipped mobile terminal to dynamically compensate for varying distances between the GPS-equipped mobile terminal and the Base Transceiver Station; and

means for refining said approximate location of the GPS-equipped mobile terminal using said Timing Advance parameter.

36. (Twice Amended) In a wireless telecommunications system having a Base Transceiver Station and a mobile terminal equipped with an integrated Global Positioning System (GPS) receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile

terminal, a system for determining the approximate position of the GPS-equipped mobile terminal,
said system comprising:

a demodulator for demodulating signals received from a multiplicity of GPS satellites
at a reference GPS receiver, said reference GPS receiver being connected to the wireless
telecommunications system and having a determinate physical location relative to the Base
Transceiver Station;

computing means for determining an estimated location of said reference GPS
receiver using said demodulated signals from said GPS satellites;

requesting means for requesting approximate locational information from the GPS-
equipped mobile terminal to the Base Transceiver Station;

a transmitter for transmitting the location of said reference GPS receiver from the
Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for said
approximate locational information; and

determination means for determining the approximate location of the GPS-equipped
mobile terminal using said transmitted location of said reference GPS receiver;

wherein the GPS satellite signals comprise one of:

Standard Positioning Service (SPS) signals received on an L1 frequency, said
L1 frequency being centered at about 1575.42 MHz; or

Precise Positioning Service (PPS) signals received on an L2 frequency, said
L2 frequency being centered at about 1227.60 MHz.

1 43. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile
4 terminal, a system for determining the approximate position of the GPS-equipped mobile terminal,
5 said system comprising:

6 a demodulator for demodulating signals received from a multiplicity of GPS satellites
7 at a reference GPS receiver, said reference GPS receiver being connected to the wireless
8 telecommunications system and having a determinate physical location relative to the Base
9 Transceiver Station;

10 computing means for determining an estimated location of said reference GPS
11 receiver using said demodulated signals from said GPS satellites;

12 determining means for determining whether a GPS signal strength at the GPS-
13 equipped mobile terminal is adequate to permit initialization of the reference GPS receiver
14 associated with the GPS-equipped mobile terminal within a desired response time;

15 requesting means for requesting approximate locational information from the GPS-
16 equipped mobile terminal to the Base Transceiver Station, if said GPS signal strength is not adequate
17 to permit said initialization;

18 a transmitter for transmitting the location of said reference GPS receiver from the
19 Base Transceiver Station to the GPS-equipped mobile terminal responsive to said request for said
20 approximate locational information; and

21 determination means for determining the approximate location of the GPS-equipped
22 mobile terminal using said transmitted location of said reference GPS receiver.

1 44. (Amended) In a wireless telecommunications system having a Base Transceiver
2 Station and a mobile terminal equipped with an integrated Global Positioning System (GPS)
3 receiver, the Base Transceiver Station having operational control of the GPS-equipped mobile
4 terminal, a system for determining the approximate position of the GPS-equipped mobile terminal,
5 said system comprising:

6 a demodulator for demodulating signals received from a multiplicity of GPS satellites
7 at a reference GPS receiver, said reference GPS receiver being connected to the wireless
8 telecommunications system and having a determinate physical location relative to the Base
9 Transceiver Station;

10 computing means for determining an estimated location of said reference GPS
11 receiver using said demodulated signals from said GPS satellites;

12 requesting means for requesting approximate locational information from the GPS-
13 equipped mobile terminal to the Base Transceiver Station;